

A Message From the Medical Society
of the State of Pennsylvania

VACCINATION

Vaccinated.
Annie K., Age 6.

Not Vaccinated.
Helen K., Age 2.

Vaccinated.
Lily K., Age 4.



Three members of a family brought to the Municipal Hospital of Philadelphia with the mother who was suffering from smallpox. The child in the center was unvaccinated; the other two had been vaccinated one year before as they were being prepared for kindergarten. These two children remained in the smallpox wards several weeks and left the hospital perfectly well.

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[The illustrations and some of the text used in this pamphlet are, with the permission of the publishers, taken from Welch and Schamberg's "Acute Contagious Diseases," published by Lea Brothers and Company, Philadelphia.]

To the Citizens of Pennsylvania :

It is difficult to understand that a medical procedure, which has stood the test of over one hundred years of experience and has satisfied the judgment of physicians and scientists, should encounter organized opposition outside of the profession. There has probably never been in the history of mankind a great discovery, the acceptance of which some men did not dispute. The great truth which Jenner gave to the world offers no exception to this statement. There are dissenters who do not believe in vaccination, but they are few in number and chiefly to be found outside of scientific circles. We know of *no physician of eminence in this country* who is not a believer in—nay, even an ardent advocate of—vaccination. *Every civilized government in the world has placed the stamp of its official sanction upon vaccination*, and practically all governments have made this procedure compulsory in their armies and navies. There is almost complete unanimity of sentiment among physicians concerning the efficacy of vaccination as a safeguard against smallpox. In our own community *all of the reputable medical teaching institutions and scientific medical bodies are unequivocally in favor of vaccination*. Last year, 1907, the faculties of each of the following institutions in the city of Philadelphia passed resolutions confirming their belief in the efficacy of vaccination and urging that the integrity of the present vaccination statutes be not interfered with: The University of Pennsylvania, the Jefferson Medical College, the Medico-Chirurgical College, the Woman's Medical College, the Philadelphia Polyclinic, the Hahnemann Medical College, and the Temple Medical College. All of the teachers and leaders of medicine in this country are in favor of vaccination.

Unanimity of opinion.

Medical Colleges in favor of vaccination.

The effort on the part of the lay opponents of vaccination to diffuse the idea that there is a pronounced difference of opinion among physicians as to the virtues of vaccination is absolutely without foundation in fact. It would be a difficult matter to find in this country five physicians in a hundred who are opposed to vaccination and these would be found chiefly among the older practitioners and most of whom are not graduates. Belief in the efficacy of vaccination has been repeatedly affirmed by the most noted scientific bodies in the world. Even as early as 1802 a committee of the British House of Commons investigated the subject and made a favorable report upon the protective power of vaccination. In 1807, the Royal College of Physicians of England made a favorable report to the House of Commons. In 1804, a Royal Com-

No difference of opinion among physicians.

mission appointed in Denmark arrived unanimously at the conviction that vaccine virus was a preservative from smallpox. In 1856, John Simon, the Medical Officer of the London Board of Health, sent circular letters to 542 prominent members of the medical profession in the United Kingdom and Europe requesting opinions as to the value of vaccination; 539 replies were received and there was *absolute unanimity* expressed as to the efficacy of vaccination as a protective measure against smallpox.

**Verdict of British
Royal Commission on Vaccination.**

The most important opinion, however, has been rendered by the British Royal Commission on Vaccination, appointed by Queen Victoria in 1889. This Commission, consisting of eminent members of Parliament, lawyers, scientists and physicians, and presided over by Baron Lord Herschell, carried out an exhaustive investigation lasting from 1889 to 1897. It held 136 meetings and examined 187 witnesses. The judgment of such a body as to the efficacy of vaccination should certainly be regarded as conclusive. In the final report, signed by eleven of the thirteen members, is found the following statement: "*It is to be hoped that our report will stimulate belief in the efficacy of vaccination, that it will remove some misapprehension and reassure some who take an exaggerated view of the risks connected with the operation, as well as lead to a more ready enforcement of the law by local authorities.*"

WHAT THE CLAIMS ARE FOR VACCINATION.

**How vaccination
protects.**

A recent, successful vaccination will confer protection against smallpox in ninety-nine out of one hundred individuals. An infant successfully vaccinated can not contract smallpox, even though it be placed in bed with a person suffering from this disease. This has been abundantly proved in every smallpox epidemic in every country. After a lapse of five or ten years, the susceptibility to smallpox may in part return, and the individual may require revaccination to again establish immunity against smallpox. Vaccination protects against smallpox much in the same manner as one attack of the disease protects against a second attack, or in the same manner that one attack of measles or scarlet fever protects against second attacks. There are in rare instances second attacks of these diseases, but the number of such attacks is relatively very small.

It is not claimed at the present day that a single vaccination will invariably protect against smallpox for life. Such life-long protection is frequently conferred, but, in most instances, the protection wears out in the course of years and requires to be renewed. The period of protection after the primary vaccination is scarcely ever less than five years and not infrequently covers a period of from ten to thirty years. After a second successful vaccination, the individual is in the vast majority of instances protected against smallpox for life.

Genuine vaccination.

When the term "vaccination" is employed, a successful vaccination is of course referred to. The mere production of a sore arm without the typical course of the vaccine affection gives no protection whatsoever.

THE RAVAGES OF SMALLPOX BEFORE THE DAYS OF VACCINATION.

Dr. Edward Jenner published his discovery of vaccination in 1798. Before the days of vaccination smallpox was a dreaded scourge that attacked eighty-five to ninety-five per cent. of the population. This terrible malady was as common in those days as measles is now; but few reached adult life without having suffered its effects. Lord MacCauley, in writing of the death of Queen Mary from smallpox in 1694, thus describes the ravages of this pestilence: "That disease, over which science has since achieved a succession of glorious and beneficent victories, was then the most terrible of all the ministers of death. The havoc of the plague has been far more rapid; but the plague has visited our shores only once or twice within living memory; and the smallpox was always present, filling the churchyards with corpses, tormenting with constant fears all whom it had not yet stricken, leaving on those whose lives it spared the hideous traces of its power, turning the babe into a changeling at which the mother shuddered, and making the eyes and cheeks of the betrothed maiden objects of horror to the lover."

Lord MacCauley's description of smallpox.

It was estimated that 400,000 persons died in Europe each year from smallpox. During the eighteenth century, London with a population of 650,000 (in 1750) averaged 1958 deaths annually from smallpox. As the mortality was about twenty per cent. this would mean 10,000 cases of smallpox a year. If the same conditions obtained in New York to-day, comparing the population of the two cities, there would be 60,000 cases annually with 12,000 deaths. Admiral Berkeley, Chairman of the Committee of the House of Commons (1802) to investigate the petition of Jenner for a Parliamentary grant, in an eloquent speech said: "The discovery of Dr. Jenner is unquestionably the greatest discovery ever made for the preservation of the human species. It is proved in this United Kingdom alone that 45,000 persons die annually of the smallpox; but throughout the world what is it? Not a second is struck by the hand of Time but a victim is sacrificed upon the altar of that most horrible of all disorders, the smallpox."

Slaughter of the thousands by smallpox.

In Germany where vaccination legislation is the most advanced of any country, smallpox as an epidemic disease is now unknown. No fair student of the subject can compare, without becoming convinced, the record of smallpox in Germany since 1874 (when compulsory vaccination and revaccination laws were enacted) with the records of this disease in Austria and other surrounding countries. If there were in existence no other statistical evidence of the efficacy of vaccination, the history of smallpox in Germany since 1874 would be sufficient testimony. After the law of 1874 went into effect the annual mortality in Prussia fell so that between 1875 and 1886 the average yearly mortality per 100,000 of population was only 1.91. On the other hand, in Austria, where the lax vaccination and revaccination requirements remained unchanged, the mortality of smallpox during about the same period (1875-1884) increased, varying between 39.28 and 94.79 per 100,000 of population. Since 1886, the mortality from smallpox in Germany has been gradually decreasing. *In 1897, there were but five*

German Statistics convincing.

deaths from this disease in the entire German Empire with a population of 54,000,000.

Marvelous
achievement in
Philippine
Islands.

Of particular interest is the recent achievement of the United States sanitary authorities in stamping out smallpox in the Philippine Islands. In 1905 and 1906, the enormous number of 3,094,635 vaccinations were performed. Dr. Victor G. Heiser, Director of Health of the Islands, in the Report of the Bureau of Health (June 30, 1907), states, "In the provinces of Cavite, Batangas, Cebu, Bataan, La Union, Rizal, and La Laguna, where heretofore there have been *more than 6000 deaths annually from smallpox*, it is most satisfactory to report, since the completion of vaccination in the aforesaid provinces, more than a year ago, *not a single death from smallpox has been reported.*"

Statistics of this character might be multiplied *ad infinitum*. Likewise could one publish page upon page of clinical experience showing the protective value of vaccination in individuals. The experience of every smallpox hospital, in every land, and in every decade, is in accord upon this subject. The immunity of recently vaccinated persons (nurses, physicians, and others) is a fact established beyond the peradventure of a doubt.

IMMUNITY OF VACCINATED PHYSICIANS, NURSES AND ATTENDANTS IN SMALLPOX HOSPITALS.

How physicians
and nurses escape
smallpox.

If it can be demonstrated that physicians, nurses, and attendants in smallpox hospitals can be perfectly protected by vaccination, then this must be regarded as a crucial test of its protective influence; for if these persons, living in the same atmosphere with scores or hundreds of smallpox patients, breathing their very exhalations, are enabled to escape the infection, it certainly should be possible for others much less exposed to acquire similar immunity.

Experience shows that physicians, nurses, and attendants, if recently successfully vaccinated, may live in smallpox hospitals in perfect safety. Dr. Marson, Physician to the Smallpox Hospital of London for many years, giving evidence in 1871, stated that during the preceding thirty-five years no nurse or servant at the hospital had been attacked with smallpox. Dr. Marson took the precaution of revaccinating all attendants before permitting them to go on duty. Dr. Collie, whose experience is also large, says, "During the epidemic of 1871 out of one hundred smallpox attendants at Homerton (England) all but two were revaccinated, and these two took smallpox." Dr. T. F. Ricketts, Medical Superintendent of the Smallpox Hospital Ships on the Thames states that out of 1201 persons in attendance on board the smallpox ships, only six contracted the disease, all of them recovering. None of these six persons had been successfully revaccinated before going on duty. According to Dr. Hill of Birmingham (England), during the epidemic of 1893, over one hundred persons were employed at the City Smallpox Hospital, all of whom had been recently revaccinated; not one of them contracted smallpox.

In the Municipal Hospital of Philadelphia during a period of thirty



A normal appearance upon the seventh day of vaccination.
Compare this picture with that of smallpox.

Nellie McD.
Never Vaccinated.

Annie McD.
Vaccinated in Infancy.



Two sisters, suffering from smallpox. The one on the right, aged fourteen, was successfully vaccinated in infancy, but not since. She contracted a mild smallpox, was never very ill and recovered without any scarring. The vaccinal scar is seen upon the left arm. The girl upon the left, aged thirteen, was never vaccinated. She developed a severe smallpox, which threatened her life and vision, but finally recovered although badly disfigured. Treated in Municipal Hospital of Philadelphia in 1902.

Severe scarring and loss of hair following smallpox in an *unvaccinated* young man. This unfortunate individual also lost one of his eyes as a result of the disease. Patient treated in the Municipal Hospital of Philadelphia in 1902.





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four years, in which time almost 10,000 cases of smallpox have been treated, there is no instance of a physician, nurse or attendant who had been successfully vaccinated or revaccinated prior to going on duty, contracting the disease.

These facts are of tremendous importance particularly when we remember that only two to five per cent. of people at large enjoy a natural immunity against smallpox. In other words, *if one hundred unvaccinated persons were exposed in a room to a well-marked case of smallpox, at least ninety-five of them would contract the disease.* These figures have been fully borne out by experience of physicians connected with the Municipal Hospital of Philadelphia and other similar hospitals.

Nearly all persons susceptible to smallpox.

ALLEGED DANGERS OF VACCINATION.

Every human act is accompanied by some measure of danger. When one rides in an elevator, in a railroad car, or even promenades upon the sidewalk, he takes a certain definite risk which can be mathematically calculated. While in the aggregate the number of accidents and deaths from each of these causes may be considerable yet the individual risk is so small that it may be disregarded. It is the same with reference to vaccination. Inasmuch as this procedure necessitates the production of an abrasion or wound it naturally is liable to infections to which wounds from other causes are subject. Most of these infections occur in persons in whom regard for cleanliness and for the subsequent care of the vaccination are neglected.

Complications the result of neglect.

If there is any class of men in the community who should be familiar with the accidents and complications of vaccination, it should certainly be the physicians. With this knowledge in their possession, medical men regard vaccination as so safe a procedure that they almost universally employ this measure upon themselves, their wives, and their children. Indeed, physicians and their families constitute the best vaccinated class in the community. English statistics show that only thirteen medical men per 1,000,000 die of smallpox as against seventy-three per 1,000,000 of the general population. The contrast is all the more striking in view of the fact that physicians are more exposed to smallpox than the average citizen.

Physicians should know.

Medical men well vaccinated.

Practically all of the accidents of vaccination are preventable by the selection of the proper virus and care of the arm after vaccination. The United States Public Health and Marine Hospital Service has supervision over the products of all vaccine establishments doing an interstate business, and has the power to revoke the license of a firm placing impure virus upon the market.

Accidents preventable.

The danger from vaccination has been enormously exaggerated by the opponents of this measure. When we consider the thousands upon thousands of vaccinations performed, even upon the unclean and under unfavorable circumstances, and note how rare it is for any serious complication to develop, we are justified in concluding that the risk attending vaccination in any individual case is practically a negligible

Dangers greatly exaggerated.

quantity. *The danger connected with vaccination is infinitesimal compared with the peril of remaining unvaccinated.*

EXPERIENCE OF THE MUNICIPAL HOSPITAL OF PHILADELPHIA DURING THE
SMALLPOX EPIDEMIC OF 1901-1904.

Vaccinated pro-
tected during epi-
demics.

During this period over 3500 cases of smallpox were received at the hospital. Not one patient, recently successfully vaccinated, was admitted to the hospital with smallpox. During the period of the outbreak of smallpox in Philadelphia, it is estimated that about 500,000 persons were vaccinated,—approximately a third of the population. If vaccination confers no protection against smallpox, it is reasonable to suppose that some of these persons would have contracted the disease and been brought to the hospital. (About eighty per cent. of all the cases in the city were sent to the hospital.) But no such patient could be found among over 3500 admissions.

Unvaccinated
workmen at-
tacked.

In order to provide accommodations in the Municipal Hospital for the unusually large number of cases of smallpox, which was rapidly increasing, it was necessary to erect additional buildings as well as enlarge those already in use. On this work from fifty to sixty men were employed, and as they were required to come constantly into close proximity to the patients they were all requested to come to the administration building and be vaccinated. This request was complied with by all except two, and these two took the smallpox. We would emphasize the fact that they were the only ones that were stricken by the disease. Later, it was found necessary to enlarge still further some of the buildings, and other workmen were employed. Two of them, for some reason which we never learned, neglected to get vaccinated before commencing the work, and they both took smallpox.

Vaccinated
medical students
immune.

The medical schools of Philadelphia have had the privilege of sending their more advanced students to the Municipal Hospital for clinical instruction in various contagious and infectious diseases therein treated. From 1901 to 1904 over 700 students visited the smallpox pavilions and studied the patients. One of the requirements was that each student had to show evidence of protection, either by having been recently successfully vaccinated or by not responding to vaccination after two or three careful trials. Of the entire number of students, but one contracted smallpox, and it was subsequently found that he had never been successfully vaccinated and was indeed opposed to vaccination.

During the epidemic of 1901-'04, about 200 persons, including physicians, nurses, ward-maids, cooks, laundresses, and the like, were employed in the smallpox department, and *not one* has contracted the disease.

These facts are not wondered at by those who are familiar with smallpox; they are anticipated. Evidence of this same nature has accumulated for nearly a half century. Every epidemic adds fresh data. This immunity of revaccinated nurses and physicians against

smallpox constitutes testimony in favor of the efficacy of vaccination which is irrefutable.

In every epidemic of smallpox that has occurred in Philadelphia within the past thirty years, instances have been observed of whole families being removed to the hospital because of an outbreak of the disease in these families. In such instances the unvaccinated children have suffered and often perished, while those who were vaccinated remained perfectly exempt, although living, eating, and sleeping in the infected atmosphere for several weeks. *But we have yet to see unvaccinated children escape the disease under similar conditions of exposure.* Furthermore, we have more than once seen a vaccinated infant take the daily supply of nourishment from the breast of its mother who was suffering from smallpox, and the infant continue as free from smallpox as if the disease were one hundred miles away and the food derived from the most wholesome source. This is evidence of the prophylactic power of vaccination that does not appear in mortality reports nor in statistical records.

Vaccinated protected; Unvaccinated stricken.

Many persons are inclined to believe that the dreadful ravages of smallpox belong rather to ancient history than to modern times. One should not, however, delude himself by such a thought, for smallpox in all its devastating terrors will visit us again if we fail to make use of the light that has been given us. That this disease may still kill by the thousands is evidenced by recent epidemics in certain of the countries of Europe. The Imperial Board of Health of the German Empire publishes the mortality from smallpox in various European countries between 1893 and 1897 inclusive. We are startled to note in this period that there died from smallpox in the Russian Empire, including Asiatic Russia, 275,502 persons; Spain lost over 23,000 lives; Hungary over 12,000, Austria and Italy over 11,000. In Germany, the number of smallpox deaths during this period was only 287, representing one death to every 1,000,000 of population per year. In our own city of Philadelphia in the epidemic lasting from 1901 to 1904, over 5000 persons were attacked, of whom 500 lost their lives. Not a death occurred in a person successfully vaccinated within a period of ten years. If vaccination and revaccination were universally carried out, then the prophecy expressed in the letter by Thomas Jefferson to Jenner would be fulfilled. *Jefferson, in 1806, wrote, "You have erased from the calendar of human afflictions one of its greatest. Yours is the comfortable reflection that mankind can never forget that you have lived; future nations will know by history only that the loathsome smallpox has existed, and by you has been extirpated."*

Modern slaughter by smallpox.

Philadelphia losses 1901-'04.

Thomas Jefferson's prophecy.

THE PRESENT VACCINATION LAW.

The object of a vaccination statute is to safeguard the people of the state against epidemics of smallpox, by securing a vaccinated population. With universal vaccination and revaccination smallpox can be completely exterminated. A general compulsory vaccination law

Smallpox can be exterminated.

such as exists in Germany, however desirable, would be most difficult to enforce here.

The legal school age offers the first practical opportunity of establishing an official supervision over the vaccinal condition of the people and of applying generally the benefits of vaccination. Through the operation of our present law a considerable measure of security against widespread and fatal epidemics of smallpox can be given to the state for the law, if enforced, secures at least a one time vaccinated population.

**Vaccination law
not compulsory.**

**But 35 out of
200,000 school
children out of
school.**

The present vaccination law is *not compulsory*. It restricts the educational privileges of those whose parents are unwilling to comply with a provision that has for its object the protection of the state against a terrible and death dealing pestilence. Except in a few districts of the state, where there has been much agitating, the present vaccination statute is satisfactory to the people. In May, 1907, a careful census was taken in Philadelphia of the children who were out of school by reason of non-compliance with the vaccination statute. The school records and the Bureau of Health records both showed that among over 200,000 children attending the public schools, but 35 remained away because of parental objection to vaccination.

The present vaccination statute constitutes the most important barrier against smallpox that the state has erected. The responsibility of removing that barrier is heavy indeed; the medical profession can not believe that the people or their representatives, once forewarned, will invite the disaster that must inevitably follow such an action.

THE LEGAL ASPECT.

Chief Justice Mitchell of the Supreme Court of Pennsylvania in delivering the opinion of that Court reaffirming the validity of the vaccination law said:—

Opinion of Supreme Court.

“At present the vast preponderance of opinion among intelligent and educated people, under the guidance of the best medical authority, is that vaccination is a highly useful ameliorative, if not always a preventive of one of the greatest scourges that have in past times afflicted humanity, and that the regulation of it by statute is *not only a justifiable but a wise and beneficent exertion of the police power over the public health.*”



Two children in the Municipal Hospital of Philadelphia in 1903, one unvaccinated and the other *vaccinated* on the day of admission: the crust is still seen upon the leg. This child remained in the hospital with its mother, who was suffering from smallpox, for three weeks and was discharged perfectly well. The *unvaccinated* child, admitted with smallpox, died.

